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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,352	02/05/2002	John Allen	E227.312-0015	1150

7590 06/18/2003

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[REDACTED] EXAMINER

LEYBOURNE, JAMES J

ART UNIT	PAPER NUMBER
	2881

DATE MAILED: 06/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/049,352	ALLEN ET AL.
	Examiner	Art Unit
	James J. Leybourne	2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 1-4 is/are allowed.
- 6) Claim(s) 5-9 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 17 July 2002 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some *
 - c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> .	6) <input type="checkbox"/> Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 3.5 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 5-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 provides for the use of an accelerator but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 7 provides a method for operating an accelerator but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass.

Claim Rejections - 35 USC § 101

3. 35 U. S. C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 5-9 are rejected under 35 U.S.C. 101 because the claimed recitation of a use/method, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example Ex parte Dunki, 153 USPQ 678 (Bd.App.1967) and Clinical Products, Ltd. V. Brenner, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Allowable Subject Matter

5. Claims 1-4 and 9 are allowed.

6. The following is an examiner's statement of reasons for allowance:

Regarding independent claim 1, the prior art fails to disclose or make obvious a linear accelerator comprising a plurality of accelerating cells arranged to convey a beam, adjacent cells being linked by a coupling cell, the coupling cells being arranged to dictate the ratio of the electric field in the respective adjacent accelerating cells, at least one cell being variable to allow a range of ratios including positive values and negative values.

The main feature that separates the scintillator apart from prior art is the capability of a coupling cell to be varied to provide positive and negative ratios. Some conventional linear accelerators include means for varying the coupling between

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adjacent accelerating cells to control the ratio of the electric fields. Others include a capability of reversing the electric field (generating a negative ratio). However, the prior art does not teach combining the capability to vary the ratio to positive and negative values in the same cell.

Claims 2-4 are allowed by virtue of their dependency on claim 1.

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Conclusion

Relevant Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Eiji Tanabe and Robert W. Hamm "Compact Multi-energy Electron Linear Accelerators", Nuclaeer Instruments and Methods in Physics Research B10/11 (1985) 871-876, North Holland, Amsterdam discuss a concept to utilize off-axis, unexcited coupling side-cavity (coupling cell) to vary the relative magnitude or sign of the accelerating fields of the adjacent centerline cavities they do not teach that both the magnitude and sign can be varied by a single coupling cell.

U.S. Pat. No. 4286192, issued Aug. 25, 1981, to Tanabe et al.,

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teaches changing the radio frequency (rf) mode in a coupling cavity, thereby reversing the field direction in part of the accelerator. The reversal of the field acts to decelerate the beam in that part of the accelerator.

U.S. Pat. No. 4,382,208, issued May 3, 1983, to Meddaugh et al., discloses changing the electromagnetic field distribution within a coupling cavity to vary the accelerating fields in part of the accelerator.

U.S. Pat. No. 4,629,938, issued Dec. 16, 1986, to Whitham, provides for detuning a coupling cavity to decrease the electric field in the part of the accelerator downstream from the detuned coupling cavity.

U.S. Pat. No. 4,746,839, issued May 24, 1988, to Kazusa et al., teaches the use of two coupling cavities in place of a single cavity. One of the other of the cavities is shorted at any one time to switch between two possible transmitted electric fields and affect the fields downstream of the dual coupling cavities.

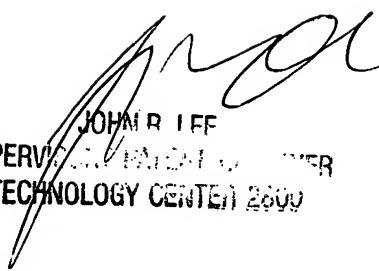
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Leybourne whose telephone number is (703) 305-7067. The examiner can normally be reached 9:00 AM - 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (703) 308-4116. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3230. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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June 13, 2003

JJL


JOHN R. LIFF
SUPERVISOR, MAILING & OVER
TECHNOLOGY CENTER, 2009